

WHAT IS CLAIMED IS:

1. An axial fan motor for a cooling unit, adapted to air-cool a heat sink of a heating element such as CPU and thermally connected to the heat sink, said axial fan motor comprising a casing formed of a plurality of laminated metal plates.

2. An axial fan motor for a cooling unit according to Claim 1, wherein

said plurality of metal plates include a single first metal plate, which is an outermost layer located at an air exhaust side of a fan, and a plurality of second metal plates;

said first metal plate includes a peripheral portion having a circular inner edge, a central portion having a circular outer edge, and a plurality of arm portions for connecting the peripheral portion and the central portion;

a bearing holder for supporting a rotary shaft of the fan is attached to the central portion; and

each of said plurality of second metal plates is

(1) a first-type second metal plate which includes only a peripheral portion having a circular inner edge,

(2) a second-type second metal plate which includes only a peripheral portion having a circular inner edge and assumes an outline of greater size than the outline of said first-type second metal plate, or

(3) a third-type second metal plate which includes only

a peripheral portion having a circular inner edge and a single cutout portion formed in the peripheral portion and assumes an outline substantially equal in size to the outline of said first-type second metal plate.

3. An axial fan motor for a cooling unit according to Claim 2, wherein all of said plurality of second metal plates are said first-type second metal plates.

4. An axial fan motor for a cooling unit according to Claim 2, wherein all of said plurality of second metal plates are said third-type second metal plates.

5. An axial fan motor for a cooling unit according to Claim 4, wherein said third-type second metal plates are arranged such that the angular positions of the cutout portions of said third-type second metal plates are successively shifted in the same circumferential direction and such that a phase shift of a predetermined angle is produced between two adjacent cutout portions.

6. An axial fan motor for a cooling unit according to Claim 2, wherein said plurality of second metal plates comprise said first-type and second-type second metal plates such that said first-type and second-type second metal plates are laminated alternately.

7. An axial fan motor for a cooling unit according to Claim 2, wherein said plurality of second metal plates comprise said second-type and third-type second metal plates such that said second-type and third-type second metal plates are laminated alternately.

8. An axial fan motor for a cooling unit according to Claim 7, wherein said second-type and third-type second metal plates are arranged alternately such that the angular positions of the cutout portions of said third-type second metal plates are successively shifted in the same circumferential direction and such that a phase shift of a predetermined angle is produced between two adjacent cutout portions.

9. An axial fan motor for a cooling unit according to Claim 2, wherein said first metal plate and the bearing holder are integrally formed of the same metal.

10. An axial fan motor for a cooling unit, adapted to air-cool a heat sink of a heating element such as CPU and thermally connected to the heat sink, said axial fan motor comprising:

a casing formed of a plurality of metal plates and a single or a plurality of resin plates, said metal plates and said resin plates being laminated.

11. An axial fan motor for a cooling unit according to Claim 10, wherein said single or plurality of resin plates comprise at least a single resin plate, which is an outermost layer located at an air exhaust side of a fan;

said resin plate includes a peripheral portion having a circular inner edge; a central portion having a circular outer edge; and a plurality of arm portions for connecting the peripheral portion and the central portion; and

a bearing holder for supporting a rotary shaft of the fan is attached to the central portion.

12. An axial fan motor for a cooling unit according to Claim 11, wherein said resin plate and the bearing holder are integrally formed of the same resin.

13. An axial fan motor for a cooling unit according to Claim 5 or 8, wherein the predetermined angle is 90 degrees.

14. An axial fan motor for a cooling unit according to Claim 2 or 11, wherein one of said arm portions has a window formed therein so as to allow looking therethrough at least at a terminal of a lead wire, and holder means for holding a lead wire.

15. An axial fan motor for a cooling unit according to Claim 1 or 10, further comprising air rectification means.

16. An axial fan motor for a cooling unit according to Claim 15, wherein said air rectification means is disposed between said axial fan motor and the heat sink and assumes the form of an air-rectification cylinder equipped with a plurality of air rectification blades.

17. A cooling unit, comprising:
an axial fan motor according to Claim 1 or 10; and
a shroud for mounting said axial fan motor above a heat sink, wherein

said shroud includes a support base having a central portion cut out and on which a casing of said axial fan motor is mounted, and a plurality of legs extending downward from a plurality of positions on a peripheral edge of said support base;

said support base covers and is thermally connected to the heat sink, and end portions of said legs are engaged with a base of the heat sink, whereby said shroud is fixedly attached to the heat sink; and

said shroud and a plate serving as an outermost layer located at an air intake side of a fan of said axial fan motor and partially constituting the casing of said axial fan motor are integrally formed of the same material.